

Guest Editorial Preface

Special Issue on *Advances in Computational Intelligence and its Applications*

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The term Computational Intelligence refers to the ability to act intelligently in a complex or undiscovered environment where traditional approaches fail. It demonstrates the capacity to learn in dynamic environments through data or experimental observations. The diversified methodologies like artificial neural networks, machine learning, evolutionary computation, Fuzzy Logic come under the umbrella of computational intelligence. By applying these methodologies of computational intelligence, the novel and intelligent solutions could be found very fast in small amount of time.

Computational intelligence has become an emerging area in fundamental and applied research amid the most recent two decades. Its reflections are scattered everywhere throughout the world, depending to a great extent on applications. It may incorporate applications and technologies from various domains such as artificial intelligence, natural language processing, computational linguistics, software engineering, information retrieval and Big Data. Articles of this special issue reflect the wide applicability of Computational Intelligence in a variety of domains.

The first article entitled “Sentiment Analysis Using Cuckoo Search for Optimized Feature Selection on Kaggle Tweets” by Kumar et al. shows the importance of selection of optimal features for sentiment analysis of textual online content. Authors proposed a model using the Binary Cuckoo Search algorithm and demonstrated that the proposed model outperformed the elementary supervised algorithms based on conventional tf-idf score on Benchmark Kaggle dataset.

Giri et al. proposed a generic model for estimating the cost of software. In this special issue, they contributed their research in terms of second article entitled as “A Generic Data Mining Model for Software Cost Estimation Based on Novel Input Selection Procedure”. Authors tested the proposed model on five datasets and proved that the integration of newly generated techniques with the proposed model gives better efficiency in software cost estimation.

Next contribution is done by Gupta et al., entitled “DE-ForABSA- A Novel Approach to Forecast Automobiles Sales using Aspect Based Sentiment Analysis and Differential Evolution”. In this article, authors proposed a model for predicting the sales of automobiles based on Aspect Based Sentiment Analysis and ClusFuDE, a hybrid forecasting model. This model works in two phases. Firstly, the user reviews are analyzed using ABSA and then sales are predicted using ClusFuDE. Authors showed the effective consistency of the model by empirically testing it on reviews & sales dataset of automobile.

In the fourth article entitled “Dependency Graph based Detection of Semantically Equivalent Questions in Online Forums”, Kaur and Gulati nicely present the need of finding the semantically

equivalent questions which will help the users while searching of answers on the online user forums. Dependency graph based matching algorithm is applied to accomplish the above said objective.

Hashmi et al. applied deep learning to automate the process of license plate detection which is helpful in car parking, toll management, defaulter detection, etc. This article is entitled “Real Time License Plate Recognition from Video Streams using Deep Learning.” Authors applied the proposed approach on full camera stills, parking videos with noise and vehicle videos shot at parking exits. They achieved an accuracy of 85% in the dataset of videos and 91% on the dataset of 4800 car images.

The last contribution of this special issue, entitled as “SWFQA Semantic Web based Framework for Question Answering” is done by Ali et al. They proposed a semantic web-based approach for question answering system on the elegant usage of natural language processing for analysis and understanding the user query. To find the relevance of each answer returned by the knowledge base, a score is calculated. Authors have shown that the results are quite promising with this technique.

All these research contributions make this issue special. It is our pleasure to present these research findings as a special issue to the readers. We would like to thank all the authors who considered this special issue as a choice for publishing their work. We are sure that this research collection will definitely help the people working in the Computational Intelligence domain. We express our sincere thanks to all the reviewers and editorial board members for completing the rigorous review process on time. Our heartfelt thanks to the Editor-in-Chief, Prof. Zhongyu (Joan) Lu for giving us the opportunity to contribute as a special issue in her esteemed journal, *International Journal of Information Retrieval Research* and for her consistent guidance throughout the process. Last but not the least, we would like to express a special thanks to Ms. Kayla Bishard and her journal publishing team who made this special issue a success.

Best Wishes,

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Guest Editors

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